CLAIMS

1. A method of detecting an anti-mycobacterial CD8 T cell response comprising contacting a population of CD8 T cells of an individual with one or more peptides selected from the peptides represented by SEQ ID NO: 3, 4, 7, 8, 9, 10, 11 or 12, and, optionally, one or two further peptides represented by SEQ ID NO: 1 and/or 2, wherein one or more of said peptides may be substituted by an analogue which binds a T cell receptor that recognises the corresponding substituted peptide, and determining whether CD8 T cells of the CD8 T cell population recognize the peptide(s).

2. A method according to claim 1 wherein a peptide panel is employed consisting of the peptides represented by SEQ ID NO's 3, 4, 8, 9 and 10, wherein one or more of these peptides may be substituted by said corresponding analogue.

3 A method according to claim 1 wherein a peptide panel is employed consisting of the peptides represented by SEQ ID NO's 1, 2, 3, 4, 8, 9 and 10, wherein one or more of these peptides may be substituted by said corresponding analogue.

4. A method according to claim 1 wherein any analogue which is used is
(i) at least 70% homologous, preferably at least 80% homologous, more preferably at least 90% homologous, to the entire corresponding substituted peptide, and/or
(ii) has one or more deletions at the N-terminus and/or C-terminus in comparison to the corresponding substituted peptide, and/or
(iii) has one or more conservative substitutions compared to the corresponding substituted peptide.

5. A method according claim 1 in which the recognition of the peptide(s) by the CD8 T cells is determined by measuring secretion of a cytokine from the CD8 T cells.

6. A method according to claim 5 in which IFN-γ secretion from the T cells is measured.

7. A method according to claim 6 in which IFN-γ secretion from the CD8 T cells is determined by allowing secreted IFN-γ to bind an immobilised antibody specific to the cytokine and then determining the presence of antibody/cytokine complex.

8. A method according to claim 1 in which the CD8 T cells are freshly isolated *ex vivo* cells from peripheral blood.

9. A method according to claim 1 in which CD8 T cells are pre-cultured *in vitro* with the peptide(s).

10. A method according to claim 1 in which the mycobacterium is *M.tuberculosis*.

11. A method according to claim 1 wherein the population of CD8 T cells is from an individual to whom an anti-mycobacterial vaccine has been administered.

12. A method according to claim 1 which is carried out *in vitro*.

13. A method according to claim 1 comprising administering one or more polynucleotides capable of expressing in human cells peptides and/or analogues as defined in claim 1.

14. A kit for carrying out a method according to claim 1 comprising one or more peptides selected from the peptides represented by SEQ ID NO: 3, 4, 7, 8, 9, 10, 11 or 12, and, optionally, one or two further peptides represented by SEQ ID NO: 1 and/or 2, wherein one or more of said peptides may be substituted by an analogue which binds a T cell receptor which recognises the corresponding substituted peptide,

and optionally a means to detect recognition of the peptide(s) by CD8 T cells.

15. A kit according to claim 14 consisting of the peptides represented by SEQ ID NO's 3, 4, 8, 9 and 10, wherein one or more of these peptides may be substituted by said corresponding analogue.

16. A kit according to claim 14 consisting of the peptides represented by SEQ ID NO's 1, 2, 3, 4, 8, 9 and 10, wherein one or more of these peptides may be substituted by said corresponding analogue.

17. A kit according to claim 14 which includes an antibody to IFN-γ.

18. A kit according to claim 17 wherein said antibody is immobilised on a solid support and which optionally also includes a means to detect any antibody/IFN-γ complex.

19. A kit for carrying out a method according to claim 13 comprising one or more polynucleotides capable of expressing in human cells one or more peptides selected from the peptides represented by SEQ ID NO: 3, 4, 7, 8, 9, 10, 11 or 12, and, optionally, one or two further peptides represented by SEQ ID NO: 1 and/or 2, wherein one or more of said peptides may be substituted by an analogue which binds a T cell receptor which recognises the corresponding substituted peptide.

20. A peptide whose sequence is represented by any one of SEQ ID NO's 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12; or an analogue which binds a T cell receptor which recognises any one of SEQ ID NO's 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12.

21. A pharmaceutical composition a peptide or analogue as defined in claim 20.

22. A method of vaccinating against infection by a mycobacterium,

wherein the vaccination leads to a CD8 T cell response, comprising administering (i) a CD8 T cell epitope of a mycobacterium protein, (ii) an analogue of the epitope which is capable of inhibiting the binding of the epitope to a T cell receptor, (iii) a precursor of (i) or (ii) which is capable of being processed to provide (i) or (ii), or (iv) a polynucleotide which is capable of being expressed to provide (i), (ii) or (iii).

23. A method according to claim 22 in which the mycobacterial protein is from *M. tuberculosis*.

24. A method according to claim 22 wherein ESAT-6 or a fragment of ESAT-6 is employed.

25. A method of vaccination which leads to a CD8 T cell response, the CD8 T cells of which are specific for a CD8 T cell epitope which is represented by any one of SEQ ID NO's: 1, 2, 3, 4, 8, 9, 10, 11 or 12, or which epitope is present in the sequence represented by SEQ ID NO: 7, said method comprising administering (i) a CD8 T cell epitope which is represented by any one of SEQ ID NO's 1, 2, 3, 4, 8, 9, 10, 11 or 12, or which is present in the sequence represented by SEQ ID NO: 7, (ii) an analogue of the epitope which is capable of inhibiting the binding of the epitope to a T cell receptor, (iii) a precursor of (i) or (ii) which is capable of being processed to provide (i) or (ii) excluding ESAT-6 or fragments of ESAT-6, or (iv) a polynucleotide which is capable of being expressed to provide (i), (ii) or (iii).

26. A pharmaceutical composition comprising an epitope, analogue, precursor or polynucleotide as defined in claim 25 and a pharmaceutically acceptable carrier or diluent.

27. A vaccine comprising an adjuvant which stimulates a CD8 T cell response and (i), (ii), (iii) or (iv) as defined in claims 22, or a vaccine comprising (i), (ii), (iii) or (iv) as defined in claim 22 associated with a delivery system capable of stimulating a CD8 T cell response.